REMARKS/ARGUMENTS

We thank the Examiner for the careful consideration given to this application.

Claims

Claims 1 and 14 have been amended for clarity. The amendments made to claims 1 and 14 are fully supported by the application as originally filed, for example, in the description at page 1, lines 8-11, page 2, lines 16-27, and page 5, lines 11 to page 7, line 21.

Claims 2, 10-13, 29, and 31 have been amended to consistently use the terms "first SQL database server" and "second SQL database server".

Claims 5, 8, 19 and 22 have been amended to recite "a system table associated with air navigation". Support for the amendments made to claims 5, 8, 19 and 22 can be found, for example, in the description at page 8, lines 12-25.

Claim 27 has been amended to clarify the relationship among tables. Support for the amendment made to claim 27 can be found, for example, in the description at page 7, line 26 to page 8, line 3.

Dependent claims 32-37 have been added. Support for new claim 32 can be found, for example, in the description at page 7, lines 18-21, page 13, lines 7-11 and page 17, lines 10-16. Support for new claim 33 can be found, for example, in Figs. 7-8 and the corresponding description. Support for new claims 34 and 35 can be found, for example, in the description at pages 32 to 38. Support for new claims 36 and 37 can be found, for example, in the description at page 7, lines 26 to page 12, line 11, page 13, lines 1 to 6, and in Figs. 3-4.

The amendments made to the claims are fully supported by the application as originally filed. No new matter has been introduced by way of the above amendments. Applicant respectfully requests the Examiner to enter the amendments.

Claims Rejection-35 USC 112

The Examiner rejected claims 1-31 under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.

With respect to claim 1, 14 and 28, the Examiner has stated "one way transfer" has not been taught in the specification.

The term "one way transfer" is not explicitly used in the original description, however the concept of "one way transfer" can be read through the original specification, for example, as follows:

1) Page 3, lines 4-6 (... stored procedure for copying data from the first database...)

2) Page 6, lines 25-30 (... Gateway SQL server receives local updates from the EXCDS SQL server...)

3) Page 7, lines 18-21 (... Gateway machine ... setup to pull data from the EXCDS SQL server every 10 minutes...)

4) Page 13, lines 7-11 (Data is eventually moved out the IIDS domain ... The GSS initiates the data "pull" so that if the GSS ceases to function ...)

5) Page 21, line 16 (The Gateway SQL Server has jobs for ... A task that transfers operational data from the EXCDS SQL server to itself)

6) Page 35, lines 10-15 (SP_TRANSFER_LOCAL ... moves data across the firewall ...)

By reading the specification as a whole, one of ordinary skill in the art, such as a Database Administrator, could understand that a stored procedure is invoked on the Gateway SQL Server and that it transfers data from the EXCDS SQL Server to the Gateway SQL Server, i.e., one way transfer, across the firewall.

With respect to claim 31, the Examiner has stated that "denormalizing" has not been taught in the specification.

The process of "denormalizing" is well known among database architects. By reading the specification as a whole, one of ordinary skill in the art could understand that some tables disclosed in the application are not designed in the third normal form, and are created through the denormalizing process. As an example, the Flight Data Entry table and the Fright Data Entry Transaction table both located on the EXCDS SQL server have almost identical structure.

The Examiner rejected claims 9, 12 and 13 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 9, the Examiner has stated that the term "Open Database Connectivity" is not understood and defined.

Applicant submits that the term "Open Database Connectivity" is well known in the art and therefore well understood and defined.

With respect to claim 12, the Examiner has stated that the term "the gateway database server" lacks antecedent.

Claim 12 has been amended to replace "gateway database server" with --the second SQL database server--.

With respect to claim 13, the Examiner has not stated any reason why the claim does not meet the requirement under 35 USC 112, second paragraph. Applicant respectfully requests the Examiner to clarify the reason of the rejection to claim 13.

Applicant respectfully requests reconsideration and withdrawal of the rejections under 35 U.S.C. 112.

Claims Rejection-35 USC 102

The Examiner rejected claims 1, 2, 5, 8-11, 14-16, 19, 22-24, and 27-31 under 35 U.S.C. 102(e) as being anticipated by Dick et al. (U.S. Patent No. 7,039,034), hereinafter referred to Dick.

Claims 1 and 14 have been amended for clarity.

As well known in the art, air traffic control systems transact critical information (operational data) for air traffic control, and thus require the security of the systems and a high data transaction rate. The present application discloses connecting and transferring operational data from an air traffic control system (secure domain) to a business system (less secure domain) without negative impact on the air traffic control system.

The database architecture disclosed in the present application includes a database manager DM 54, an EXCDS SQL server 60, a Gateway SQL server 62, and a secured network (e.g., firewall, intranet) for communications between the SQL servers 60 and 62. In an air traffic control system, the EXCDS SQL server 60 communicates with the database manager DM 54, and stores the operational data for air traffic control. In a business system, the Gateway SQL server 62 is used as an access point to the air traffic control system. The Gateway SQL server 62 pulls (requests) data from the EXCDS SQL server 60 through the secured network. The Gateway SQL server 62 copies data from the EXCDS SQL server 60 using a stored procedure in the Gateway SQL server 62. A user in the business system has access to the operating data in the Gateway SQL server 62.

Using the secured network and the stored procedure, data transfer is restricted so that operating data is transferred from the EXCDS SQL server 60 to the Gateway SQL server 62 only, which ensures the security and integrity of the system. Further, the data transfer is driven based on the request from the Gateway SQL server 62, thereby off-loading the EXCDS SQL server 60 so that the EXCDS SQL server 60 can be more responsive to the data manager. In this way, the critical air traffic control usage of the data is not compromised by delays in responsiveness.

By contrast, Dick discloses a method of expanding bandwidth over wireless IP connections so as to enhance internet access by multiplexing and embedding datagram information. Dick teaches increasing the user perceived bandwidth of the Internet by using multiplexing technology. Dick is irrelevant to the present invention.

With respect to the rejection to claim 1, the Examiner has stated that Dick discloses database architecture for an air traffic information display system (col. 9, lines 52-65 of Dick).

Col. 9, lines 52-65 of Dick states the principles of object oriented programming and is irrelevant to a method and database architecture for communication between a secured air traffic control system and a business system. Col. 9, line 62 of Dick merely states that "Objects can represent physical object ... or an aircraft in an air-traffic-control system".

With respect to the rejection to claim 1, the Examiner has stated that Fig. 5 of Dick discloses a firewall and a second database server.

Col. 8, line 5-8 of Dick states "As an option, the various computers may be connected to the network by way of a server 514 which may be equipped with a firewall for security purposes". Applicant submits that this is a general description which is applicable to the vast majority of business and computer networks implemented today. Dick merely describes a typical platform on which their method of multiplexing datagram would be applicable, and is not directed to database architecture for an air traffic information display system as recited in claim 1. This is due to the fact that Dick is directed to a datagram multiplexing method, and does not disclose or suggest connecting and transferring operational data from the air traffic control system (secure domain) to a business system (less secure domain).

With respect to the rejection to claim 1, the Examiner has stated that Dick discloses a data transfer link (being encrypted) for implementing a one-way transfer of the data between the first database server and the second database server ... (col. 15, line 65 to col. 16, line 18 and line 48 to col. 17, line 21 of Dick).

The quoted sections of Dick state the principles of Virtual Private Networks (VPNs), Bluetooth technology and encryption. It is clear that the method of Dick is used in the public domain where these technologies are prevalent. Dick does not disclose or suggest data communication between an air traffic system in a secured domain and a business system.

Dependent claims further contain features neither disclosed nor suggested by Dick.

With respect to the rejection to claim 9, the Examiner has stated that Dick discloses the first interface being an Open Database Connectivity (interpreted as a connection) (col. 1, line 56 to col. 2, line 20 and col. 4, lines 11-45).

Col. 1, line 56 to col. 2, line 20 of Dick does not disclose or suggest any open database connectivity. Col. 4, lines 11-45 of Dick gives a description of how datagram may be multiplexed across disparate networks. ODBC is a basic connection between a database client and a database server that is used to enhance query performance. ODBC is not designed to be multiplexed nor does it care what type of local area connectivity exists between the client and the database server.

With respect to the rejections to claims 19 and 22, the Examiner has stated that Dick discloses the first/second tables include a system table (inherent ...).

Claims 19 and 22 have been amended to clarify that a system table is associated with air navigation. Dick fails to disclose or suggest the subject matter defined by claims 19 and 22.

With respect to the rejection to claim 27, the Examiner has stated that Dick discloses the second table being populated by a trigger (col. 18, lines 13-25).

Claim 27 has been amended for clarity. Col. 18, lines 13-25 of Dick merely discloses LZW compression in which a simple ciphering method is used to reduce the size of a file or message. Dick neither suggests nor teaches a second table in a first SQL database server is populated by a trigger associated with a first table in the first SQL database server.

With respect to the rejection to claim 28, the Examiner has stated that Dick discloses the stored procedure run by a scheduled job by which the one-way transfer of the data is implemented periodically (col. 15, line 65 to col. 15, line 18 and line 48 to col. 17, line 21).

Col. 15, lines 65 to col. 16, line 18 of Dick discloses virtual private network (VPN) technology, and col. 16, line 48 to col. 17, line 21 of Dick discloses Bluetooth technology and encryption. These sections of Dick do not disclose or suggest a stored procedure (in a second SQL database server) being run by a scheduled job to send a request for updating the first SQL database server and copying the operating data from the first SQL database server based on the request.

The present application further discloses features neither suggested nor taught in any prior art. For example, in the present application, tables are designed to remove all dependencies in order to maximize transaction performance (e.g., page 7, line 26 to page 12, line 11 and Figs. 3-4, claim 37). This results in potential data redundancies, contrary to current database design theory.

Applicant respectfully requests reconsideration and withdrawal of the rejections.

Claims Rejection-35 USC 103

The Examiner rejected claims 3, 4, 6, 7, 12, 13, 17, 18, 20, 21, 25, and 26 under 35 U.S.C. 103(a) as being unpatentable in view of Dick.

Claims 3, 4, 6, 7, 12, 13, 17, 18, 20, 21, 25, and 26 depend on claim 1 or 14. As discussed, Dick neither suggests nor teaches the subject matter defined by claims 1 and 14.

Hence it is respectfully submitted that claims 1 and 14 and dependent claims 2-13 and 15-37 are patentable in view of the cited reference. Applicant respectfully requests reconsideration and withdrawal of the rejection.

In view of the above amendments and remarks, and having dealt with all of the matters raised by the Examiner, early reconsideration and allowance of the application is respectfully requested.

If any additional fee is required, please charge Deposit Account No. 02-2666. A duplicate of this transmittal is enclosed for deposit account charging purposes.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

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James C. Scheller, Jr.
Reg. No. 31,195

12400 Wilshire Blvd.
Seventh Floor
Los Angeles, CA 90025-1030
(408) 720-8300